STATE OF THE ENVIRONMENT REPORT

Review Outline
May 28, 2002

Table of Contents:

Note: Indicators presented for illustrative purposes only

Chapter: Introduction

A. This Report

1. Agency goals to make air cleaner, water purer, and our land better protected
2. Importance of understanding the state of our environment
3. The purpose and scope of this report

B. Indicators: Helping Us Achieve Results

1. "Environmental Indicators Initiative" and focus on managing for results
2. Using indicators to improve communication and environmental management
3. Plans for further refinement and development of optimum indicators and measures, and for expanded partnerships.

C. Looking Ahead

1. Plans for "on-line" or virtual SOE report
2. "Drill down" capability for environmental indicators
3. Solicit and invite input.

Chapter: U.S. Environment At A Glance

The categories below will be described in narrative, map, and statistical format to the extent needed to cover the topic. These will not be "indicators" per se, but will provide background information. Indicators that depend on this background may be discussed in the Ecological Health and Water chapters.

A. Introduction

B. Land Cover - classifications, distribution and change

Map(s) and statistics of various land cover classes in the U.S. - multiple sources for these data - some remotely sensed data (e.g, NLCD) and others from limited statistical sampling (e.g., NRI).

C. Water Networks - (including watersheds) classifications and distribution

Statistics of water features - river miles (from NHD-Reach File 3 data base), perhaps stream flow information (from USGS NAWQA), acreage of lakes (from NHD), estaurine square miles (from NHD), wetland acreage (from NLCD/NWI/NRI), and ground water extent (from USGS NAWQA).

D. Land Uses

E. Climate

Average temperatures, precipitation

F. Ecosystems - description and distribution

Potentially, Ecoregions, Omernick's, Bailey's....

G. Human population distribution in the U.S.

Human population distribution based on Census data, perhaps "Cities at Night".
Overview of health statistics

Chapter: Ecological Condition

A. Introduction

The chapter defines ecological condition and discusses:

-the importance of ecological condition
-the condition of ecosystem types at the national scale
-pressures on ecological condition
-challenges and future directions for measuring national ecological health.
-description of ecological condition
-why is ecological condition important?

B. Ecological Condition of the United States

What is the extent and condition of the various (terrestrial, wetlands and aquatic) ecosystems?

[Insert charts on forest health, wetlands inventory, aquatic species, coastal conditions, among others.]

C. Pressures on Ecological Condition

What are the pressures on ecological condition?

[Insert discussion and indicators on pressures on landscape condition, biotic condition, chemical and physical characteristics, and hydrology and geomorphology.]

D. Challenges and Data Gaps

Chapter: Human Health

A. Introduction

This chapter will look at human health in the United States and how it is influenced by environmental pollution.

B. Condition of Human Health of the United States

How does the health of the United States Rank in Respect to the Rest of the World?

Life Expectancy
Infant Mortality
Major Causes of Death
Cancer Incidence and Deaths
Summary

What are the Temporal and Geographic Trends for Mortality and Morbidity for Selected Diseases Within the United States?

Chronic Diseases - Cardiovascular Diseases
Infectious Diseases - Gastrointestinal Illness
Children s Issues - Childhood Cancer
Emerging Exposure-Related Health Effects

C. Human Exposure to Environmental Pollutants

What are the pathways for exposure to environmental pollution?
What is the Body Burden for environmental pollutants?

Heavy Metals
Pesticides [*short descriptions for each chemical category*]
Persistent Organic Pollutants
Organochlorines
Cotinine
Volatile Organic Chemicals

D. Diseases Thought to be Related to Environmental Pollution

What is the Environmental Burden of Disease?
Examples: Evidence for Diseases Related to Environment

Chronic Disease - Cardiovascular Disease
Infectious Diseases -Gastrointestinal Illness
Children s Issues - Asthma

E. Challenges and Data Gaps

Chapter: Cleaner Air

A. Introduction

This chapter summarizes the current status and foreseeable trends in cleaning up the air outdoors and in buildings where Americans live, work, and go to school. It presents data on five specific areas:

-The Nation's outdoor air quality overall, and how it is changing;
-Indoor air quality and how it may relate to susceptible population groups;
-Acid rain and long-range transport of air pollution;
-Stratospheric ozone depletion, commonly referred to as the "ozone hole"; and
-Climate change.

[Insert two paragraphs or charts here, one on contributions of air pollution by key sectors]

B. Outdoor Air

What is the quality of the nation's air and how has this changed?
[Insert charts on concentrations of criteria and hazardous air pollutants. Include point of no existing national monitoring network for air toxics and reliance on estimates.]

What are the contributors poor air quality how has this changed?
[Insert charts on emissions of criteria and hazardous air pollutants.]

To what extent is U.S. air quality the result of pollution from other countries?

To what extent does U.S. air pollution affect other countries?
[Insert discussion on pollutant transport.]

What are the health effects associated with poor air quality?
[Insert text here addressing health effects. Public health and air quality researchers associate aggravated respiratory problems with air quality.]

What are the ecological effects air pollution? [Insert text here addressing environmental impacts. Insert information on areas of crop lands and forestry affected by ozone.]

C. Indoor Air

What is the quality of the air in the nation's buildings, i.e., homes, schools, offices? [Insert text/data here from EPA on number of residences thought to be at risk from elevated radon levels, and data on radon mitigation activities. Insert a second paragraph to address environmental tobacco smoke and ventilation /air exchange data.]

What are the contributors to poor indoor air quality?
[Describe primary sources of indoor air pollutants.]

What are the human health effects of poor indoor air quality?
[Insert text here on ETS/blood cotinine levels, on mold/respiratory ailments. Address potential risks of sensitive or susceptible population groups. Draw connections with health effects chapter.]

D. Stratosphere Ozone

What is happening to the earth's ozone layer?
[Insert chart on ozone levels over North America]
What are the levels and trends in UV?

What is causing changes to the ozone layer? [Include charts on emissions and concentrations of ozone depleting substances]

What are the human health effects?
[Include data or chart here on increased incidence of skin cancer and cataracts in U.S. and connection to stratospheric ozone depletion. Address in risk assessment context.]

What are the ecological effects?

E. Acid Rain

What are the deposition rates of pollutants that cause acid rain?

What are the sources and causes of acid rain?
[Insert charts on nitrogen and sulfur deposition and NOx and SOx emissions.]

What are the ecological effects associated with acid rain?

G. Climate Change

Is the earth's climate changing? Is there a trend?
[Insert text/chart here addressing patterns and trends of both emissions and concentrations. Address modeling results for global mean temperature projections.]

What are the contributors to climate change? How are they changing over time?
[Insert text/chart here addressing major greenhouse gases and sources of greenhouse gas emissions. Address results and data from EPA's Climate Change Action Plan under Clean Air Act.]

What are the effects on human health?
[Insert text on estimates of increasing temperature. Insert text on potential adverse and beneficial impacts based on assessments.]

What are the ecological effects associated with climate change?

H. Challenges and Data Gaps

I. Strategies to Protect our Air

(Placeholder for "light touch" response discussions)

Chapter: Cleaner Water

A. Introduction

[Insert chart with data on water usage.]

B. Water and Watersheds

[Possibly insert figure from - http://www.epa.gov/owow/watershed/whatis.html]

What is the condition of U.S. waters and watersheds? What are the changes?
[Insert graphic of trend in miles/acres of rivers and lakes meeting state water quality standards for designated uses. Chemical, Physical and Biological integrity]

What are the stressors on water and watersheds?
[Insert chart with data from EPA Coastal Condition Report.]

What are the effects on human health?

What are the ecological effects associated with poor water quality?

C. Drinking Water

What is the quality of used for drinking and how has this changed?

[Insert chart with data from Safe Drinking Water Information System.]
[Insert chart on waters designated for drinking water use that do not meet that use.]

What are the causes of drinking water contamination?

What are the health effects of consuming contaminated drinking water?

D. Recreation In and On the Water

What is the condition of surface waters that support recreational use and how has it changed over time?
[Insert chart showing trend in number of miles/acres not meeting recreational water quality standards and or trend in the number of beach days that beaches are open.]

What are the sources of recreational water pollution?

What are the health effects associated with recreation in contaminated waters?

E. Consumption of Fish and Shellfish

What is the condition of surface waters to support consumption of fish and shellfish and how has it changed over time?
[Insert chart of trend in number of waters with shellfish advisories.]
[Insert map of watersheds exceeding health based water quality standards for mercury and/or PCBs.]

What are the contaminants in fish and shellfish and where do they come from?
What are the health effects of consuming contaminated fish and shellfish?

F. Challenges and Data Gaps

G. Strategies to Protect our Water Resources

(Placeholder for "light touch" response discussions)

Chapter 5: Better Protected Land

A. Introduction

This chapter explores the current state of knowledge about the nation's land environment, including:

- The extent, classification, and uses of lands in the U.S.;
- The pressures on the lands resulting from various uses and land management practices;
- The effects of pressures on human and environmental health.

Specifically, this chapter examines how land is used for human purposes, and the activities that humans carry out on the land that affect the quality of the environment. The following topics are described in some detail:

- Patterns and implications of land use;
- Chemical applications to the land in the form of fertilizers and pesticides;
- Patterns of land contamination and volumes and types of waste produced.

B. Land Use and Land Use Change

How is land being used and how is that changing?
[Insert graphics on current land use distribution and changes in land use.]
Special focus on urbanization, agriculture, and mining.

What are the factors affecting land use?
[Insert graphics on population distribution and change in population over time.]

What are the human health effects of different land uses?

What are the ecological effects of different land uses?

C. Pesticides and Fertilizers

What is the volume, distribution and extent of pesticide and fertilizer use?

What are the trends in alternatives to chemical use?

What are the human health effects of chemical use on land?

What are the ecological effects of chemical use on land?

D. Waste

How much waste and what types are generated? How has this changed over time?
[Amts of waste generated, locations of waste facilities, chem content of waste]

How much land is contaminated and how has this changed over time?
[Discussion of NPL, Superfund equiv., RCRA sites, UST, Brownfields, BRAC, landfills]

How does land become contaminated and how has this changed over time?
[TRI releases, reported spills, reported releases]
factors that lead to land contamination.

What are the effects of waste minimization, preventing land contamination or revitalizing contaminated or underutilized lands?
What is being done to prevent or reduce waste generation and what are the benefits to preserving land and natural resources?
What is being done to protect the land from future contamination?

What are the human health effects of waste and contaminated land?

What are the ecological effects of waste and contaminated land?

E. Challenges and Data Gaps

F. Strategies to Protect our Land

(Placeholder for "light touch" response discussions)